**IN THE U.S. PATENT AND TRADEMARK OFFICE**

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| Appl. No.: | 10/033,597 |
| Applicants: | Mojsilovic et al. |
| Filed: | December 27, 2001 |
| TC/AU: | 2624 |
| Examiner: | Brian Q. Le |
| Docket No.: | YOR920010138US1 |
| Customer No. | 48237 |

Title: PERCEPTUAL METHOD FOR BROWSING, SEARCHING, QUERYING AND VISUALIZING COLLECTIONS OF DIGITAL IMAGES

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**APPELLANT'S REPLY BRIEF**

Sir:

This paper is herewith filed in response to the Examiner's Answer mailed on 01/31/2008 for the above-captioned U.S. Patent Application and is filed within the allowed period and of time for filing.

**Remarks**

The Applicants/Appellants maintain the arguments presented in the Appeal brief submitted October 26, 2007.

The only ground for rejection presented for review by the Board is whether claims 1 and 3-28 are unpatentable under 35 U.S.C. §102(b) as being anticipated by Jain et al., U.S. Patent No. 5,915,250 (herein Jain).

For a rejection to be made under 35 U.S.C. 102(b), it is well recognized that "to constitute an anticipation, all material elements recited in a claim must be found in one unit of prior art", Ex Parte Gould, BPAI, 6 USPQ 2d, 1680, 1682 (1987), citing with approval In re Marshall, 578 F.2d 301, 304, 198 USPQ 344, 346 (CCPA 1978).

Applicants/Appellants respectfully disagree with the characterization of the teachings in Jain. Specifically, Applicants/Appellants assert that Jain does not teach "the perceptual features and their combinations are derived at least in part through subjective experiments performed with human observers" as recited in claim 1.

The Examiner asserts that Jain teaches "wherein the perceptual features and their combinations are derived at least in part through subjective experiments performed with human observers" as in claim 1.

The Examiner states that Jain implicitly teaches this point at col. 8, lines 25-35. However the cited portion states:

> "The overall similarity between two images lies literally "in the eye of the beholder." In other words, the perceptual distance between images is not computable in terms of topological metrics. The same user will also change his or her interpretation of similarity **depending on the task at hand**. To express this subjective element, the VIR interface provides functions to allow the user to control which **relative combinations of individual distances** satisfies his or her needs. As the user changes the relative importance of primitives by **adjusting a set of weighting factors** (**at query time**), the VIR system incorporates the weight values into the similarity computation between feature vectors" (emphasis added).

This cited portion appears to teach that "at query time" the user may "control which relative combinations of individual distances satisfies his or her needs" "depending on the

task at hand". Clearly, the cited portion of Jain refers to adjusting "weighing factors" of queries, however it does not disclose or suggest how the "primitives" are derived.

Consider further:

> "However, the most important aspect of the Query Window 200 are the sliders (such as slider 208) to **control the relative importance or weights** 204 for the visual and textual aspects of the query. There are sliders to indicate the **importance of visual query attributes** such as Color, Texture 206, Shape, Location, and textual query attributes such as Keywords. The ability to select perceptual weights of attributes is a critical aspect of the visual query over which the user has control" (col. 11, lines 11-22, emphasis added).

> "There are several ways to compare images using the API. Each method involves **computing one or more similarity distances** for a pair of primitive vectors. The computation of the similarity distance is performed in two steps. First, for **each primitive** such as local color 270, global color 272, structure 274 or texture 276, a similarity distance (score) is computed. **Similarity scores for primitives** are further discussed in conjunction with FIG. 11. These scores ($s_i$) are then **combined** at state 280 **with weights** ($w_i$) 282 by a judiciously chosen function that forms a final score... An image 288 with the best score (the lowest score in the presently preferred embodiment) is **ranked at the closest match**. Of course, the definition of "**similarity**" at this point is **determined by the set of weights 282** used" (col. 12, line 49 – col. 13, line 3).

As described in Jain, the "weights" are provided during "query time". At this point the list of "primitives" is pre-determined. Jain disclosing "for each primitive... a similarity distance (score) is computed". These scores "are **then** combined at state 280 with weights... that forms a final score".

The weights indicate the "importance of visual query attributes". Clearly, the user provided "weights" are used to compute a "similarity distance" when comparing two images. However, the "weights" provided are not disclosed as deriving "perceptual features and their combinations".

Thus, as disclosed in Jain, the user provided weights are supplied after the "primitives" are derived. The weights describe the relative importance of the primitives for an individual query. Clearly, the user provided weights are not used to derive "perceptual features and their combinations" which are in turn used to model a "semantic category" as in claim 1.

Additionally, it is noted that Jain discloses:

> "When the analysis module 122 is utilized to insert images into the database 132, the **feature vector** of the computed primitive data is **stored** in a data structure 264" (col. 12, lines 26-29, emphasis added)).
>
> "The Query Processor 261 obtains a candidate feature vector for an image "i" from **feature vector storage** 264 (part of database 132). The feature vector of the query target ($FV_{TARGET}$) and the candidate feature vector ($FV_i$) are then both submitted to the comparison module 124" (col. 12, lines 43-46, emphasis added).

Jain discloses that "feature vectors" are computed when an image is inserted into the database. Then during a query, "candidate feature vectors are obtained from "feature vector storage". Clearly, as described in Jain, the user provided weights are supplied well after "feature vectors" are computed. Clearly, the user provided weights are not used to derive "perceptual features and their combinations" as in claim 1.

The Examiner observes that Jain provides a means for a developer to "define one or more custom primitives and register the primitives with the primitive registration interface 306" (col. 20, lines 30-40). However, Jain does not provide any guidance as to how such "custom primitives" may be derived.

Furthermore the only mention of experimentation in Jain is on col. 19, lines 61-64:

> "To calibrate a custom primitive against this cost scale, some **empirical experiments** must be performed and the execution of the new procedures timed relative to the time taken by the Global Color primitive" (emphasis added).

Clearly, Jain discloses "empirical experiments" to "calibrate a custom primitive against this cost scale". This does not disclose "wherein the perceptual features and their combinations are derived at least in part through **subjective experiments** performed with human observers" as in claim 1.

Clearly, the disclosure of Jain does not disclose (either explicitly or implicitly) "perceptual features and their combinations" that are "derived at least in part through subjective experiments performed with human observers" as in claim 1.

As Jain does not disclose all elements of claim 1, Jain does not anticipate claim 1. Thus, for at least this reason claim 1 is patentable over Jain.

As claims 14 and 25 recite similar language to that discussed above with reference to claim 1, claims 14 and 25 are likewise distinguished over the disclosure of Jain.

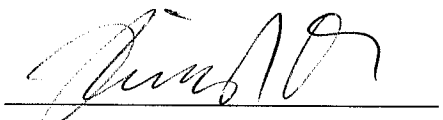
Therefore, each of independent claims 1, 14, and 25 is patentable over Jain. Because independent claims 1, 14, and 25 are patentable, each of dependent claims 3-13, 15-24 and 26-28 are also patentable for at least the reasons given above.

For at least the above reasons, the Applicants/Appellants contend that claims 1 and 3-28 are patentable over Jain.

The disclosure of Jain does not disclose "perceptual features and their combinations" that are "derived at least in part through subjective experiments performed with human observers". There is no indication in the disclosure of Jain of "subjective experiments performed with human observers" in order to derive "perceptual features". While the disclosure of Jain describes sliders "to control the relative importance or weights" of "visual and textual aspects of the query"; the sliders allow the user to affect the "similarity computation" rather than derive "perceptual features". Additionally, the disclosure of Jain describes "Developer-Defined Primitives", however deriving such primitives "in part through subjective experiments performed with human observers" is not described.

The Applicants/Appellants respectfully request the Board reverse the final rejections, and further that the Board rule that the pending claims are patentable over the cited art.

Respectfully submitted:



03/31/08

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